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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/283,198 04/01/99 FIEDLER

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IM22/0302

EXAMINER

SORKIN, D

GUIREN WANG  
1547 MISSISSAUGA VALLEY BLVD STE 1503  
MISSISSAUGA ON L5A 3X8  
CANADA

ART UNIT

PAPER NUMBER

AIR MAIL

1723

DATE MAILED:

03/02/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

## Office Action Summary

Application No.

09/283,198

Applicant(s)

FIEDLER ET AL.

Examiner

David L. Sorkin

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 April 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some \* c) ☒ None of the CERTIFIED copies of the priority documents have been:
1. ☒ received.
2. ☐ received in Application No. (Series Code / Serial Number) \_\_\_\_\_.
3. ☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

### Attachment(s)

- 14) ☒ Notice of References Cited (PTO-892)
- 15) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 16) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 17) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 18) ☐ Notice of Informal Patent Application (PTO-152)
- 19) ☐ Other: \_\_\_\_\_

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### DETAILED ACTION

1. Note: It is considered that there are two claims, the first claim beginning on page 4 with "(1)" and the second beginning with "(2)".

#### ***Priority***

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Germany on 03 April 1998. It is noted, however, that applicant has not filed a certified copy of the foreign application as required by 35 U.S.C. 119(b).

#### ***Specification***

3. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.
4. The specification is objected to because the claims do not begin on a separate sheet of paper.
5. Applicant is advised on how to arrange the content of the specification.

#### **Content of Specification**

- (a) Title of the Invention: See 37 CFR 1.72(a). The title of the invention should be placed at the top of the first page of the specification. It should be brief but technically accurate and descriptive, preferably from two to seven words.
- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.
- (c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.
- (d) Reference to a "Microfiche Appendix": See 37CFR 1.96(c) and MPEP § 608.05. The total number of microfiche and the total number frames should be specified.

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- (e) Background of the Invention: The specification should set forth the Background of the Invention in two parts:
  - (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."
  - (2) Description of the Related Art: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."
- (f) Brief Summary of the Invention: A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.
- (g) Brief Description of the Several Views of the Drawing(s): A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
- (h) Detailed Description of the Invention: A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. This item may also be titled "Best Mode for Carrying Out the Invention." Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another

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patent or readily available publication which adequately describes the subject matter.

- (i) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). **The claim or claims must commence on separate sheet. (37 CFR 1.52(b)).** Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps.
- (j) Abstract of the Disclosure: A brief narrative of the disclosure as a whole in a single paragraph of 250 words or less on a separate sheet following the claims.
- (k) Drawings: See 37 CFR 1.81, 1.83-1.85, and MPEP § 608.02.
- (l) Sequence Listing: See 37 CFR 1.821-1.825.

### ***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1 and 2 are rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph.

The claim(s) are narrative in form and replete with indefinite and functional or operational language. The structure which goes to make up the device must be clearly and positively specified. The structure must be organized and correlated in such a manner as to present a complete operative device. **The claim(s) must be in one sentence form only.** Note the format of the claims in the patent(s) cited.

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8. Regarding claim 2, the phrase "for example" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

9. Regarding claim 2, the phrase "i.e." renders the claim indefinite because it is unclear if the invention as claimed is limited by the range following this phrase.

10. Regarding claim 2, the phrase "a new receptivity mechanism discovered by the authors recently" renders the claim indefinite, because it is unclear what mechanism or range of mechanisms is claimed.

11. Regarding claim 2, the phrase "should" renders the claim indefinite because it is unclear if the limitation(s) to which the phrase applies are part of the claimed invention.

12. The following terms have insufficient antecedent basis in claim 1: "the fluids", "the trailing edge of the splitter plate", "the secondary vortices", "the corner", "the splitter plate", "the tube wall", "the wall", and "the function of the mixing process".

13. The following terms have insufficient antecedent basis in claim 2: "the necessary excitation", "the mixing process", "the two initial streams", and "the trailing edge".

***Claim Rejections - 35 USC § 101***

14. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

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15. Claim 2 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claimed invention must be a process, machine, manufacture, or composition of matter.

***Claim Rejections - 35 USC § 103***

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wygnanski (US 4,257,224).

18. Note: The claims are rejected under 35 U.S.C. 103 instead of 102, because it is unclear what is being claimed, as explained above with regard to 35 U.S.C. 112.

19. Claim 1: Wygnanski (US 4,257,224) discloses a whole mixing chamber, consisting of one or more tubes, in each of which fluids to be mixed, come in separately and first meet each other downstream of a trailing edge (7) of a splitter plate (3) (fig. 1; column 3, lines 26-41).

20. Claim 2: Wygnanski (US 4,257,224) discloses a periodic excitation for a mixing process, where a periodic component overlaps the velocity of two streams. The variation of amplitude is also disclosed. Methods of producing the periodic excitation are disclosed including a forced flap (4) in trailing edge. (see especial fig. 1 and column 2, lines 10-21).

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**Conclusion**

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Jacobs III (US 3,408,050) discloses a tube with a splitter plate and the period excitation of the a fluid stream to accomplish mixing.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David L. Sorkin whose telephone number is 703-308-1121. The examiner can normally be reached on 7:30 - 5:00 Mon.-Thur., Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on 703-308-0457. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7718 for regular communications and 703-305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

*David Sorkin*

David Sorkin

February 17, 2000

*Wanda Walker*  
W. L. WALKER  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700